



## **Safety Topic of the Month**

### **RI-370: Management of Change, Replacement in Kind**

**Richmond Refinery**

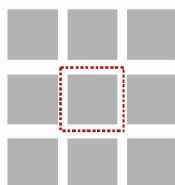
**June 2011**

# Changes Requiring MOC

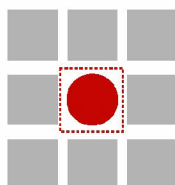
**The MOC process manages changes (except for “replacement in kind”) to a covered process; these are changes that do not satisfy the existing design specification.**

- Use of different feeds, chemicals, or catalysts.
- Use of different process conditions, process control, instrumentation, and protective devices which would affect the plant or other plants (upstream or downstream). E.g., operating outside of established “Safe Upper or Lower Limits,” outside of equipment specifications, piping identified at flagged thickness, etc.
- Use of new or modified equipment or piping that is not a “replacement in kind.”
- Equipment siting, buildings, trailer locations, roads, or bridges.
- Changes to operating procedures that may affect workplace safety or maintenance procedures that may affect the ongoing integrity of process equipment.

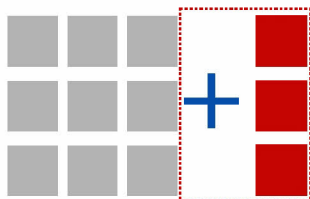
# MOC Definition of Change



Replacement In Kind (RIK)



Not In Kind Change



Capital Project Tie-in



# Replacement in Kind (RIK)

RI-370 Management of Change Appendix III describes examples of "In Kind" vs. "Not in Kind" changes for:

- Equipment
- Piping and Flanges
- Pumps and Compressors
- Turbine, Reciprocation Steam Drivers, and Motors
- Instrumentation
- Chemicals and Catalysts
- Operating Procedures
- Maintenance Procedures
- Operating Changes
- Control Systems
- Equipment Relocation
- Electrical Distribution
- Inventory Changes

# A few examples of "In Kind" vs. "Not in Kind" changes



| Type of Change  | Examples of "In-Kind"  | Examples of "Not-in-Kind"  |
|-----------------|--|--|
| Valves          | Same style, material, rating, and size, and meets the original design specs.           | Different style, material, rating, or size.  |
| Control Systems | Operating within established limits.<br>Changing set points within established limits. | Changes to ladder or control logic.<br>Changes to monitoring system or equipment.<br>Change of alarm, S/D, or trip limits. |

It is the responsibility of all Employees and Contractors to recognize other than in kind changes.

# Incident examples where the MOC process was not followed



Hydraulically dampened check valves replaced with spring loaded check valves on a cooling water line resulting in water hammer and rupture of the line.





# Incident examples where the MOC process was not followed (cont.)



Vacuum/Pressure relief devices replaced with flapper style check valves resulting in a partial tank collapse.



## Questions?

If you have questions, please contact anyone in the PSM group:

- North Yard WPIA @ 2-3224
- South Yard WPIA @ 2-5620
- PSM Specialist @ 2-5098
- PSM Team Lead @ 2-1547

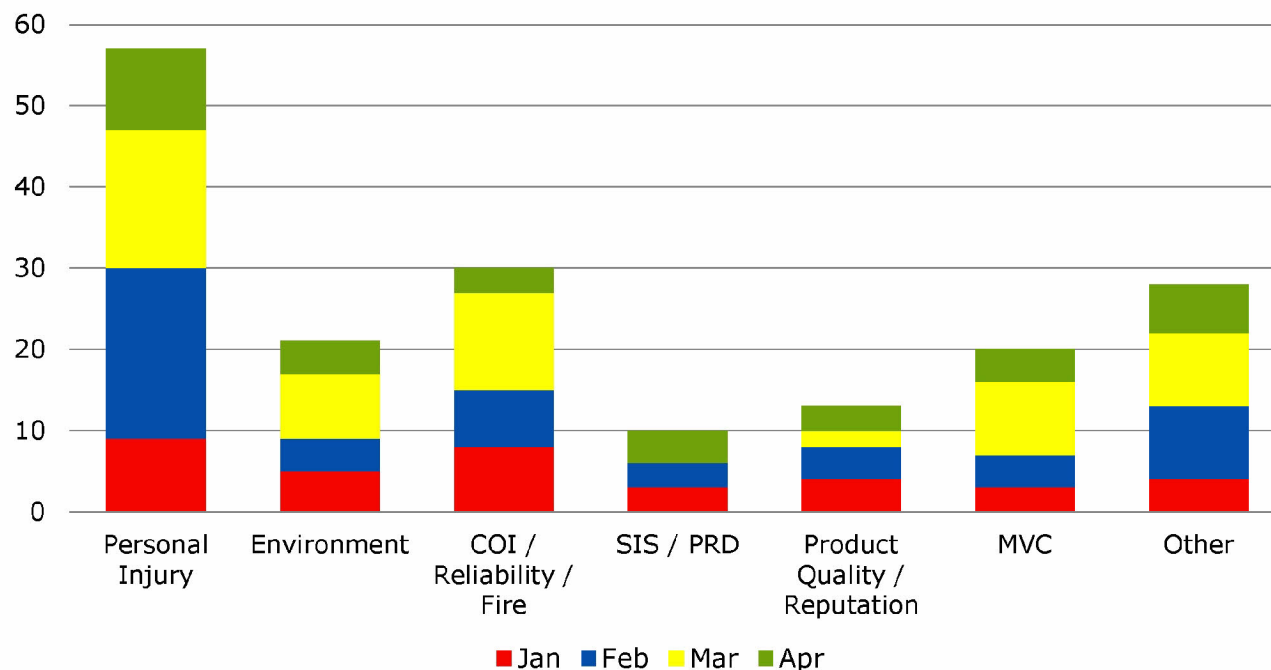




# Near Loss Reporting



## Near Loss by Category - 2011



### Green Card Reports – Some Highlights

- Broken exhaust fan blades reported (+ LOTO needed for fan)
- Incorrect pipe fittings (air connection) removed from steam line & fire water line
- Multiple reports of cell phone use while driving in refinery



# Review TOP Lessons Learned

Learning from our past incidents will help us prevent them in the future. Please take a few minutes now to review the TOP lessons learned.

## TOP Lessons Learned